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NINTH MONTHLY NARRATIVE REPORT

15 April 1965

REFERENCE

STAT Contract [redacted]

STAT [redacted]

Declass Review by NGA.

REPORTING INTERVAL

10 March 1965 - 10 April 1965

OBJECTIVE

The objective of this program is the design, construction, and testing of a prenormalizing system to be used for problems of automatic target identification on aerial imagery. The prenormalizer will scan the image and, by special filtering techniques, produce a set of measurements which have minimal change with translation and rotation of the specific image on the scene. Testing is to be accomplished on the CONFLEX I Adaptive Recognition System.

STATUS OF ACTIVITIES AND ACCOMPLISHEMENTS

THE PRENORMALIZING SYSTEM

The Scanning System. During this interval, the integral scanner was tested using the mercury arc fluorescent lamps for which the original design called. A lack of quality control on the part of the lamp supplier has caused wide

variations in lamp characteristics, which are deleterious to system performance in two ways. First, the wide range of electrical characteristics makes it impossible to control lamp intensities within the desired limits and the particular pressure and current density parameters which were chosen do not have good stability.

These factors caused us to postpone experimentation until a second illumination system could be installed and checked out. A ten-watt incandescent lamp has been installed behind each sample aperture and preliminary checks of the video characteristics demonstrate that they will be quite suitable for use in the system.

The remainder of the scanner has been optically, electrically, and mechanically checked out during this interval. The remaining effort lies only in the completion of wiring necessary to operate the incandescent lamps.

The Electronic Processor. The electronic processor portion of the prenormalizer is completed and debugged, with the exception of the preliminary filters. Concentrated efforts on the scanner this interval were carried out in favor of completing the twenty preliminary filters. Their construction has been resumed now that the scanner development is ending.

The portion of the system from the inputs to the secondary filter to the CONFLEX I System have been successfully operated and simple experiments with simulated video have been performed.

Experimental Schedule. Our plans for the experimental work, now delayed because of the scanner rework, will begin with the simple simulated imagery on hand. Efforts are still being made to secure meaningful test imagery which can be used universally among workers in this field. The imagery expected from RADC is not yet forthcoming.

TIME SPENT ON PROJECT (CUMULATIVE TOTAL)

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202 Hours

588 Hours

TECHNICAL AGREEMENTS MADE

None

DIFFICULTIES ENCOUNTERED

The problem with the mercury-fluorescent lamps described above has caused additional slip in our original time schedule. Full time-testing of the system will now be somewhat less than three months. However, no additional funds will be required to complete the program and it is believed that a satisfactory test program can be executed in the time remaining.

PROGRAM FOR THE NEXT INTERVAL

During the next interval, the scanner rework will be completed and the initial phase of testing will begin.

PREPARED B

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Project Engineer

Director of Engineering